

FOCUS AREA E: HEALTH ALERT NETWORK/ COMMUNICATIONS AND INFORMATION TECHNOLOGY

The Department of Public Health (MDPH) has developed a plan for meeting the benchmarks and critical capacities in Focus Areas A, B, C, E and F that will strengthen statewide as well as regional and local public health infrastructure. This plan will allocate at least 60% of the funding and resources directly or indirectly to the regional and local level. The actual funding level may be higher than 60% if planned regional collaborations are successfully implemented through the establishment of regional consortia. In collaboration with local public health agencies, the Department proposes to provide funding and resources necessary to facilitate the establishment of collaborative regional structures which include local health agencies which will be described in greater detail under Critical Capacity #3.2. For preliminary-planning purposes these are referred to as CRLSs or Collaborative Regional and Local Structures.

CRITICAL CAPACITY: *to ensure effective communications connectivity among public health departments, healthcare organizations, law enforcement organizations, public officials, and others as evidenced by: a) continuous, high speed connectivity to the Internet; b) routine use of e-mail for notification of alerts and other critical communication; and c) a directory of public health participants (including primary clinical personnel), their roles, and contact information covering all jurisdictions.*

1. Prepare a timeline for developing a plan that ensures that 90 percent of the population is covered by the Health Alert Network (CRITICAL BENCHMARK #11)
2. Prepare a timeline for the development of a communications system that provides a 24/7 flow of critical health information among hospital emergency departments, state and local health officials, and law enforcement officials. (CRITICAL BENCHMARK #12)
3. Building on the Critical Benchmark above, assess the existing communication connectivity in your jurisdiction and determine whether this capacity is adequate.

Progress Towards Critical Capacity

- ◆ Effective communications with local public health agencies and public health partners has been a top priority for the Massachusetts Department of Public Health (MDPH). Due to Massachusetts' unique public health structure with 351 independent jurisdictions, connectivity varies considerably. For critical alerts, the Department currently utilizes a broadcast fax/pager communication system (Broadcast Communicator) from which the majority of the local public health agencies may receive alerts. In addition, the majority of hospital emergency rooms, infection control personnel, infectious disease physicians, disaster coordinators and ambulance providers are accessible via this system. The current communications system is 24/7, unidirectional, and operated by the Division of Epidemiology and Immunization. Non-urgent information is sent via U.S. mail.
- ◆ The current public health directory includes the following:
 - local public health agencies (public health agents at the local boards of health) kept current through unidirectional communications originating at the local public health agencies
 - emergency room physicians kept current through monthly contacts at select hospitals
 - ambulance personnel for one of six regions statewide kept current through constant phone communications
 - select family physicians receiving vaccine directly from the Massachusetts Immunization Program
- ◆ Initial analysis of the Department of Justice (DOJ) survey of local public health agencies indicated the need for health information communication system with redundant means of communication

Proposed Activities to Meet Critical Capacity

- ◆ MDPH will provide technical support, software, and hardware, as necessary, to local public health agencies and public health partners in order to ensure effective communications connectivity.
 - engage local public health agencies to determine their needs for local communications
 - using the DOJ survey as a guide, develop and administer new survey to assess the local public health agencies' and public health partners' connectivity capacity
 - in conjunction with collaborative regional and local structures, prioritize allocation based on need and population size to ensure that 90% of population has communications connectivity
 - provide local public health agencies with hardware, such as computers and servers, and software as necessary
 - provide local public health agencies with high-speed internet access as appropriate
 - provide local public health agencies with on-site contractual technical support for implementation and maintenance
- ◆ Establish Secure Web Portal to provide a secure infrastructure and a centralized directory of Public Health Personnel

(including LBOH, fire, police and other first responders).

- provide software and hardware licenses for local public health agencies including funding for annual renewal
- provide funding for administrative oversight of directory
- ◆ Develop Health Alert Network providing for 24/7 flow of critical health information to local public health agencies and public health partners.
 - HAN components include:
 - Health Alerts- 24/7 emergency response communication (e.g. meningitis outbreak at college in Worcester County)
 - News- current public, unrestricted informational updates (e.g. aggregate disease reports, new ACIP statement on flu vaccine)
 - Training- schedules and materials for on-line educational trainings and other learning opportunities
 - Document Library- restricted access to public health related materials and reports (e.g. *Guide to Surveillance and Reporting*, bird reports restricted by local jurisdiction)
 - Discussion Threads- secure access to discussion forum open to all Public Health professionals (e.g. coordination and communication between local boards of health)
 - provide funding for development of Health Alert Network application beyond existing funding
 - provide software and hardware licenses including funding for annual renewal
 - provide funding for administrative oversight of user identification and role assignment
 - provide contractual technical support for deployment and training of local public health agencies.
- ◆ Participate in statewide multi-site drill coordinated by Massachusetts Medical Society and MEMA. (Coordinated with Focus Areas A,B,C,F,G)
- ◆ Provide funding to incorporate HAN functionality (i.e. health alerts) into immunization registry (MIIS) to accommodate BT- related vaccine preventable diseases; this will provide communication with over 3,000 healthcare providers, and provide a mechanisms to ensure vaccine accountability and distribution. MIIS began the requirements phase of development in Spring 2002.

Proposed Timeline and Evaluation

- ◆ By 07/01/2002, complete administration of revised survey to assess local public health agencies and other public health partners' connectivity
- ◆ By 08/01/2002, determine hardware and infrastructure needs of local public health agencies
- ◆ By 08/01/2002, process and timeline for allocation of resources for local public health agencies
- ◆ By 08/01/2002, meet with representatives from collaborative regional and local structures to ensure local communication needs will be met
- ◆ By 10/01/2002, begin distribution of hardware to local public health agencies.
- ◆ By 07/01/2002, timeline in place to ensure high-speed Internet access for local public health agencies covering 90% of the population
- ◆ By 08/01/2002, with input from collaborative regional and local structures ,gather appropriate information required for public health directory including local and state public health agencies, fire, police and other first responders; explore legal concerns regarding collection of these data
- ◆ By 05/15/2002, receive deployment plan and timeline from HAN vendor
- ◆ By 08/01/2002, have pilot HAN accessible to state public health officials and a select number of local public health agencies; complete evaluation of functionality per MDPH requirements
- ◆ By 11/01/2002, implement web portal to allow increased, secure access to HAN
- ◆ By 03/01/2003, review project functionality and obtain feedback from local public health agencies for mechanisms for improvement

CRITICAL CAPACITY: *to ensure a method of emergency communication for participants and public health emergency response that is fully redundant with email.*

1. Assess the capacity in your jurisdiction for redundant communication devices (two-way radios, cell phones, voice mail boxes, satellite phones, or wireless messaging), the capacity of existing systems at the state and local level to broadcast and/or autodial to automatically distribute alerts and messages to these devices, and the capacity to link to the emergency communication systems of local emergency response partners. If necessary, make improvements during this budget cycle.
2. Routinely assess the timeliness and completeness of the redundant method of alerting as it exists to reach participants in public response.

Progress Towards Critical Capacity

- ◆ Due to Massachusetts' unique public health structure with 351 independent jurisdictions, the current response capacity varies considerably. The current status of communications connectivity is as follows:
 - Broadcast fax/pager communication system (Broadcast Communicator); operated by Department level staff.
 - Broadcast Communicator also used by Region 2 first responders for ambulance diversions.
 - Mail-based dissemination of non-critical information.

Proposed Activities to Meet Critical Capacity

- ◆ In conjunction with local public health agency survey, assess local communication mechanisms, including fax machines, pagers, cell phones, voice mail boxes, satellite phones, wireless messaging and 2-way radio communication.
- ◆ Meet with collaborative regional and local structures to determine local public health agencies' needs and provide appropriate redundant communications such as fax machines, pagers, cell phones, voice mail boxes, satellite phones, wireless messaging and 2-way radio communication.
- ◆ Participate in statewide multi-site drill coordinated by Massachusetts Medical Society and MEMA. (Coordinated with Focus Areas A,B,C,F,G)
- ◆ Provide funding to establish routine assessment of timeliness and completeness of alerts (see Focus Area B, proposed FTE Epidemiologist to assess timeliness and completeness of reporting).

Proposed Timeline and Evaluation

- ◆ By 07/01/2002, complete administration of revised survey to assess local public health agencies redundant communication systems
- ◆ By 08/01/2002, complete review of redundant communication mechanisms with input from local public health agencies
- ◆ By 08/01/2002, establish a timeline and additional funds for upgrade existing redundant communication system.
- ◆ By 03/01/2003, ensure all local public health agencies have, at a minimum, fax machines and alpha numeric pagers to be used in conjunction with the Health Alert Network
- ◆ By 10/01/2002, hire one FTE epidemiologists, in conjunction with Focus Area B)
- ◆ By 03/01/2003, provide assessment of timeliness and completeness of alerts and make recommendations for improvements as appropriate

CRITICAL CAPACITY: *to ensure ongoing protection of critical data and information systems and capabilities for continuity of operations.*

1. Assess the existing capacity in your jurisdiction regarding policies and procedures for protecting and granting access to secure systems for the management of secure information, system backups, and systems redundancy. If necessary, develop a proposal for improvements during this budget cycle.
2. Perform regular independent validation and verification of Internet security, vulnerability assessment, and security and continuity of operations practices, and rapidly implement recommended remedial activities.

Progress Towards Critical Capacity

- ◆ MDPH currently protects personally identifiable disease-related information in secure, locked areas and databases. The functional requirements for the HAN detail infrastructure and applications to be used for the protection and controlled user authorization to data. This is a priority that will be further addressed by the establishment of a secure web-based

portal and HAN.

Proposed Activities to Meet Critical Capacity

- ◆ Develop confidentiality policies to include electronic data storage and access.
- ◆ Provide funding for the establishment of a firewall for the protection of critical information resources available on the Internet.
- ◆ Provide funding for the implementation of Public Key Encryption (or comparable).
- ◆ Provide funding to contract with an independent IT security firm to perform ongoing penetration testing and vulnerability analysis.
- ◆ Routinely evaluate security and confidentiality policies and protocols.

Proposed Timeline and Evaluation

- ◆ By 06/01/2002, develop confidentiality policies to include electronic data storage and access
- ◆ By 07/01/2002, establish a firewall for the protection of critical information resources available on the Internet and implement Public Key Encryption (or comparable)
- ◆ By 10/01/2002, contract with an independent IT security firm to perform ongoing penetration testing and vulnerability analysis

CRITICAL CAPACITY: to ensure secure electronic exchange of clinical, laboratory, environmental and other public health information in standard formats between computer systems of public health partners. Achieve this capacity according to relevant IT functions and specifications.

1. Assess the existing capacity in your jurisdiction to exchange electronic data in compliance with public health information and data elements exchange standards, vocabularies, and specifications as referenced in the NEDSS initiative. If necessary, develop a proposal for improvements during this budget cycle.
2. Ensure that the technical infrastructure exists to exchange a variety of data types, including possible cases, possible contacts, specimen information, environmental sample information, lab results, facilities, and possible threat information.
3. Regularly confirm the successful transmission and receipt of information to and from public health partners.

Progress Towards Critical Capacity

- ◆ In early 2002, a Department-wide Data Standards Committee was established to review different industry standards and to develop Department-wide standards in regards to data storage, transmission and format that are compliant with HIPAA, NEDSS and other federal standards, as appropriate.
- ◆ In 2002, MDPH will be implementing the NEDSS Base System which will allow for internal communication and exchange of information within the Bureau of Communicable Disease Control. Existing databases currently operate as silo systems with individual data standards and security functions.
- ◆ Currently MDPH receives electronic exchange information from a few laboratories.
- ◆ Paper-based disease case management at both local and state level; electronic database to capture related information at state level.

Proposed Activities to Meet Critical Capacity

- ◆ Formalize Department-wide data standards in compliance with HIPAA, NEDSS and other standards, as appropriate.
- ◆ Implement NEDSS Base System and include components for:
 - secure disease reporting which will allow for bi-directional, real time electronic reporting/notification capability between LBOH, MDPH, healthcare providers, hospitals and laboratories.
 - case management which will facilitate epidemiologic case investigations and optimize time and ease administrative burden
 - customization of CDC-supplied Base System as necessary
- ◆ The MDPH State Laboratory Institute (SLI) is developing an Integrated Information System (SLIS). The SLIS will include the use of a patient-based database, electronic reporting and laboratory data interchange using web-based functionality between the Bureau of Communicable Disease Control and other private and government clients. The system will include web-based data entry for hospital and private laboratory sites through a secure data network, using standards and specifications, as they become available through the National Electronic Disease Surveillance System

(NEDSS). The electronic interchange of laboratory data will be transmitted in accordance with electronic data interchange (EDI) accepted standards adapted for public health use (e.g., NEDSS, HL7). Logical Observation Identifiers, Names and Codes (LOINC) will be used for test specifications and Systematized Nomenclature of Human and Veterinary Medicine (SNOMED) will be used for test results. SLIS will support the electronic interchange of all required data for notifiable diseases, and surveillance and prevention efforts of the Massachusetts and federal STD Prevention Programs.

- ◆ Both the NEDSS Base System and SLIS will include measures to ensure data confidentiality using a system architecture that assures data privacy and confidentiality for remote intranet or Internet access in accordance with NEDSS and HIPAA privacy and proposed security standards.
- ◆ Provide training for IT personnel for standardization of requirements gathering.
- ◆ Provide technical support to collaborative regional and local structures, specifically local and community hospitals, to ensure that hospital are capable of electronic reporting using HL7 or other appropriate messaging system.

Proposed Timeline and Evaluation

- ◆ By 07/01/2002, complete Department-wide data standards to be implemented by NEDSS, HAN and other systems, as necessary.
- ◆ By 10/01/2002, hire Systems Analyst to provide technical support to collaborative regional and local structures including local public health agencies and public health partners, specifically local and community hospitals.
- ◆ By 09/01/2002, pilot electronic laboratory reporting through SLIS and/or HAN and confirm successful transmission and receipt of information to and from public health partners.
- ◆ By 10/01/2002, pilot NEDSS Base System and make adjustments as necessary.
- ◆ By 12/01/2002, pilot NEDSS case management modules with select local public health agencies and evaluate process.
- ◆ By 03/01/2003, expand NEDSS case management modules to remaining local public health agencies.